UK Health Security Agency

Vaccination against shingles

Information for healthcare practitioners

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Contents

Document history

Version number	Change details	Date
01.00	New information document	2013
02.00	Document revised to include updated information on vaccination programme eligibility	March 2018
03.00	Entire document reviewed and updated Information on Shingrix vaccine included	August 2021
04.00	Document transferred to UKHSA template; no changes to text (February 2022)	February 2022

Background

In 2010, the Joint Committee on Vaccination and Immunisation (JCVI) was asked by the Secretary of State for Health to review the available evidence relevant to the introduction of a universal vaccination programme to protect against shingles (Herpes Zoster).

The JCVI considered a range of issues including disease epidemiology, vaccine efficacy, vaccine safety and the cost effectiveness of introducing a routine shingles vaccination programme in the UK. Based on the findings of the cost-effectiveness analysis, the JCVI recommended a universal routine herpes zoster (shingles) vaccination programme using a single dose of the live Zostavax shingles vaccine for adults aged 70 with a catch-up programme for those aged 71 to 79 years.

From September 2013, a single dose of the Zostavax shingles vaccine was offered routinely to individuals aged 70 years (born on or after 1 September 1942) with a phased catch up programme based on age as of 1 September that year.

From 1 April 2017, it was agreed that individuals could be opportunistically immunised at any time of the year once they reached the eligible age (70 or 78 years), but in order to ensure appropriate vaccine supply, the majority of individuals continued to be immunised during the autumn months.

During March 2018, practices were informed that patients who became 70 or 78 years of age could be opportunistically immunised at any point in the year following their 70th or 78th birthday, and patients remained eligible until their 80th birthday.

In February 2018, the JCVI recommended that the Shingrix inactivated shingles vaccine should be offered to all immunocompromised individuals for whom Zostavax is contraindicated but who are eligible for vaccination under the current programme, so that they can gain a similar level of protection to those who are not immunocompromised. The Committee noted that vaccination in this group was particularly important, due to the higher incidence of herpes zoster. This advice was consistent with the original recommendation for vaccination of all adults aged 70 to 79 years with herpes zoster vaccine. At this time, there were insufficient supplies of Shingrix vaccine to be able to implement this recommendation.

From September 2021, Shingrix vaccine will be available as an alternative shingles vaccine for use in patients where Zostavax is clinically contraindicated.

Shingles vaccine is available through GP surgeries in primary care and GPs are encouraged to identify and offer the shingles vaccination to eligible patients.

From 1 September 2021, GPs should offer the non-live shingles vaccine Shingrix to all those who are eligible for shingles vaccination but who are clinically contraindicated to receive the live vaccine Zostavax due to their immunocompromised status.

It is important that Shingrix is given only to those who are clinically contraindicated for Zostavax (for example due to immunocompromised status) in order to have sufficient

vaccine supply for those who need to receive it. Immunocompetent eligible patients should continue to be offered Zostavax.

Any individual who reaches their 80th birthday is no longer eligible for a shingles vaccination due to the reducing efficacy of the vaccine as age increases. This reflects the recommendation made by JCVI in 2010.

Shingles

Shingles (herpes zoster) is a viral infection of an individual nerve and the skin surface that is served by the nerve. Shingles infection develops as a result of a reactivation of latent varicella zoster virus, the same virus that causes chickenpox. Once a person has recovered from chickenpox, the varicella zoster virus lies dormant in the nerve cells and can reactivate at a later stage when the immune system is weakened. Reactivation of the virus is thought to be associated with immunosuppression as a result of a decline in cell mediated immunity.

Reactivation of the virus and the subsequent development of shingles infection can occur in individuals of any age. However, the risk and severity of shingles increases with age (Van Hoek and others, 2009), immunosuppression and HIV.

The burden of disease amongst adults aged 70 and above is considerably greater than for younger adults. Older adults tend to experience a severe form of the disease which can result in secondary complications including persistent pain or post herpetic neuralgia (PHN) and secondary bacterial skin infections that may require hospitalisation.

Images of shingles are available to view on the NHS.UK website

The Green Book Shingles Chapter 28a

The Green Book Shingles (herpes zoster) Chapter 28a includes detailed information on shingles and the shingles vaccination programme.

Healthcare practitioners should familiarise themselves with this Green Book chapter before offering shingles vaccination and refer to relevant parts of the chapter for information on:

- the disease
- history and epidemiology of the disease
- shingles vaccination and vaccine efficacy
- storage
- presentation
- dosage and schedule

- administration
- disposal
- recommendations for the use of the vaccines
- contraindications
- immunosuppression and HIV infection
- special considerations for the vaccination of individuals on immunosuppressive therapy
- management of at risk individuals following significant exposure to herpes zoster
- precautions
- transmission after live vaccination
- testing of post-Zostavax vaccination rashes
- inadvertent vaccination with Zostavax in individuals under 50 years of age
- inadvertent vaccination of Zostavax in immunosuppressed individuals
- inadvertent vaccination with Zostavax during pregnancy
- adverse reactions
- supplies

The shingles vaccination programme

Purpose of the routine programme

The aim of the shingles vaccination programme is to reduce the incidence and severity of shingles disease in adults aged 70 years and above as they have an increased risk of severe disease and subsequent post herpetic neuralgia (PHN).

Eligible cohort

All patients are eligible for shingles vaccine once they reach 70 years of age and they remain eligible until they reach their 80th birthday. Shingles vaccine can be offered opportunistically throughout the year. The programme does not offer patients the vaccine after they become 80 years of age due to the reducing efficacy of the Zostavax vaccine as age increases. However, where an individual has turned 80 years of age following their first dose of Shingrix, a second dose should be provided to complete the 2 dose schedule for Shingrix.

Vaccination of patients outside of the national immunisation programme recommendations

GPs can apply their clinical discretion and provide Zostavax shingles vaccine, following a clinical assessment, to those who are not currently eligible for the national programme but

who would benefit medically, for example those with underlying conditions which increase their risk of shingles. Vaccine supplied to practices free of charge via ImmForm cannot be used for this purpose. GP surgeries should order Zostavax vaccine directly from the manufacturer and then reclaim the cost of the vaccine.

The limited available supply of NHS Shingrix vaccine means that this vaccine should only be used in patients who are 70 to 79 years of age and in whom Zostavax is clinically contraindicated. A supply of Shingrix vaccine would need to be sourced privately for use outside the national programme.

Individuals who are not eligible to receive either shingles vaccine as part of the national programme but who wish to pay for the vaccine privately should discuss their request with a private provider and should be made aware that they will be liable for the full cost of the vaccine and any additional administration charges that the private provider may apply.

GPs are not able to charge their own patients registered at their practice a private fee for the vaccine and should not use centrally procured stock for the national programme to vaccinate private patients.

Shingles vaccine

There are 2 shingles vaccines available for use with the national programme for 70 to 79 year old patients which are:

- Zostavax, a live vaccine given as a single dose – offered to everyone from 70 to 79 years of age (unless contraindicated due to underlying medical condition or immunosuppressive treatment)
- Shingrix, a recombinant sub-unit vaccine given as a 2-dose schedule – available for individuals 70 to 79 years of age who are clinically contraindicated to receive Zostavax (for example due to immunocompromised status)

Prescription only medicines

Both Zostavax and Shingrix are prescription only medicines and must be administered using a prescription, Patient Group Direction (PGD) or Patient Specific Direction (PSD). UKHSA have developed PGD templates for Zostavax and Shingrix to support the delivery of the shingles vaccine programme. These are available on the Immunisation patient group direction (PGD) templates page of the GOV.UK website.

Zostavax vaccine

Zostavax is a live, attenuated varicella-zoster vaccine that contains a high antigen content of varicella zoster virus (Oka/Merck strain, not less than 19,400 plaque-forming units).

Zostavax does not contain latex or thiomersal but it does contain hydrolysed gelatine derived from pork as one of its additives (see section below on gelatine). Zostavax may contain traces of neomycin so Zostavax vaccine should not be given to individuals who have had a confirmed anaphylactic reaction to neomycin. For full list of contraindications immunisers should ensure that they are familiar with the Zostavax PGD (UKHSA template) and the Summary of product characteristics (SmPC).

Gelatine

Gelatine is commonly used in a range of pharmaceutical products, including many capsules and some vaccines. The gelatine in Zostavax is a highly purified product and is used as a stabiliser to protect the live virus against the effects of temperature and ensure that the vaccine remains safe and effective during storage.

It is recognised that the inclusion of gelatine may raise issues of acceptability for some people who do not consume animal products, or those whose faith avoids consumption of products from specific animals.

The use of gelatine in certain live vaccines is discussed in detail in the UKHSA publication Guide to the use of human and animal products in vaccines and a specific leaflet A leaflet on the use of porcine gelatine in vaccines is available to read and order in several different languages on the GOV.UK website. Shingles vaccinators are encouraged to read these leaflets and to refer individuals to them where they request more information about this.

The Shingrix vaccine does not contain gelatine as it is not a live vaccine and therefore does not require the use of this stabiliser. However, the limited supply of Shingrix vaccine currently available will only be sufficient for immunosuppressed individuals. Shingrix therefore cannot be offered as an alternative for those individuals who decline Zostavax because of its gelatine content.

Shingrix vaccine

Shingrix is an inactivated recombinant adjuvanted subunit shingles vaccine. It does not contain any live virus.

Shingrix contains a single protein glycoprotein E (gE) found in the outer shell of the herpes zoster virus, and an adjuvant to enhance the body's immune response to the antigen. By combining the varicella zoster virus (VZV) specific antigen (gE) with the AS01B adjuvant, Shingrix is designed to induce antigen-specific cellular and humoral immune responses in individuals with pre-existing immunity against VZV.

Shingrix does not contain latex, thiomersal or gelatine.

Shingrix vaccine was approved for use in adults 50 years of age or over in the US, Canada and Australia in 2017, and for use in the European Union and Japan in 2018.

For full list of contraindications immunisers should ensure that they are familiar with the Shingrix PGD (UKHSA template) and the Summary of product characteristics (SPC).

Vaccine excipients

A full list of all the vaccine excipients can be found in the specific vaccine Summary of Product Characteristics (SPC) which are:

- Zostavax SPC
- Shingrix SPC

Vaccine dosage and schedule

Zostavax

Zostavax should be administered as a 0.65ml dose after reconstitution.

The schedule for Zostavax is a single dose of vaccine.

Shingrix

Should be administered as a 0.5ml dose after reconstitution.

The schedule for Shingrix consists of 2 doses of vaccine given 2 months apart. The second dose can be administered 2 to 6 months after the initial dose but as Shingrix vaccine is being offered to immunocompromised individuals, a 2 month interval between doses is recommended to ensure individuals are protected as soon as possible.

Booster doses

The need for, and the timing of a booster dose, for either Zostavax or Shingrix has not yet been determined. Therefore no booster dose is currently recommended.

Vaccine administration

Both Zostavax and Shingrix should be reconstituted according to the manufacturer's instructions. Once reconstituted, the vaccine should be administered immediately.

Zostavax

Zostavax should be administered by intramuscular (IM) injection, preferably into the deltoid region.

Although initially licensed for subcutaneous injection, in January 2016, Zostavax was licensed for administration via the intramuscular (IM) or subcutaneous (SC) routes. As

injection site adverse reactions were significantly less frequent in those who received the vaccine via the IM route, IM administration is preferred.

Shingrix

Shingrix vaccine should be administered by intramuscular (IM) injection only, preferably into the deltoid muscle. Subcutaneous (S/C) administration is not recommended due to an increase in transient local reactions.

Vaccination for individuals with bleeding disorders

Individuals with bleeding disorders may be vaccinated intramuscularly if, in the opinion of a doctor familiar with the individual's bleeding risk, vaccines or similar small volume intramuscular injections can be administered with reasonable safety by this route. If the individual receives medication or treatment to reduce bleeding, for example treatment for haemophilia, intramuscular vaccination can be scheduled shortly after such medication or treatment is administered.

Individuals on stable anticoagulation therapy, including individuals on warfarin who are up to date with their scheduled INR testing and whose latest INR was below the upper threshold of their therapeutic range, can receive intramuscular vaccination. A fine needle (equal to 23 gauge or finer calibre such as 25 gauge) should be used for the vaccination, followed by firm pressure applied to the site (without rubbing) for at least 2 minutes.

If in any doubt, consult with the clinician responsible for prescribing or monitoring the individual’s anticoagulant therapy.

The individual or carer should be informed about the risk of haematoma from the injection.

Vaccine ordering

Vaccines for the national shingles vaccination programme should be ordered via the ImmForm website. Healthcare practitioners should refer to this website and Vaccine update (the vaccination newsletter for healthcare practitioners) for up to date information on vaccine availability. As the programme is a year-round programme and not a seasonal programme, vaccines should be ordered regularly throughout the year.

Healthcare practitioners are reminded to only order what they need for a 2 to 4 week period rather than over-ordering or stockpiling vaccines. Vaccines should be ordered, stored and monitored as described in the Green Book Chapter 3 (Storage, distribution and disposal of vaccines).

Vaccines required for individuals who are not in the eligible cohort, for example where the practice has decided that it is clinically appropriate to vaccinate the patient but they are under the age of 70 years, would require the GP practice to purchase the vaccine directly from the manufacturer and then reclaim the cost of the vaccine. The limited supply of

Shingrix vaccine available means that Shingrix vaccine should only be used for patients who are 70 to 79 years of age where Zostavax is clinically contraindicated.

Vaccine storage

Zostavax and Shingrix should be stored in a vaccine refrigerator between +2°C and +8°C. The vaccines should be stored in the original packaging to protect them from light. Further information on vaccine storage is available in the SPC (Zostavax, Shingrix), the Patient Group Direction and from the manufacturer.

Vaccine contraindications and precautions

Contraindications

Contraindications to Zostavax are:

- confirmed anaphylactic reaction to a previous dose of varicella-containing vaccine or any component of the vaccine
- pregnancy
- immunosuppression due to underlying condition or treatment as defined in the Green Book Shingles Chapter 28a

Contraindications to Shingrix are:

- systemic allergic reaction (including immediate-onset anaphylaxis) to a previous dose of Shingrix vaccine or any component (excipient) of Shingrix

For full details of contraindications refer to:

- Green Book Shingles Chapter 28a
- PGD for the specific vaccine (UKHSA templates) Zostavax, Shingrix

Additional information can be found in the Specific vaccine Summary of Product Characteristics (SPC): Zostavax SPC; Shingrix SPC.

Precautions

Immunisation of individuals who are acutely unwell should be postponed until they have recovered fully. This is to avoid confusing the diagnosis of any acute illness by wrongly attributing any sign or symptoms to the adverse effects of the vaccine.

Recommendations for the use of shingles vaccines

The decision as to which shingles vaccine should be administered to an individual should be based on a full clinical assessment.

Shingrix should only be offered to those who are age 70 to 79 years and contraindicated to receive Zostavax due to immunosuppression caused by their underlying condition or treatment.

For full details about which conditions and medications or therapies would require that an individual should be offered Shingrix instead of Zostavax amongst this age group, vaccinators must refer to the Green Book Shingles Chapter 28a.

Vaccination of eligible individuals in clinical risk groups

The section below provides information about different conditions and treatments that affect the immune system and may make the live shingles vaccine Zostavax unsuitable. If primary healthcare practitioners administering the vaccine have questions or concerns about the nature of therapies (including biologicals) or the degree of immunosuppression, they should contact the individual's relevant specialist team for advice. Specialist advice should also be considered for individuals on combination therapy.

Patients with Rheumatoid Arthritis (RA)

Patients with rheumatoid arthritis (RA) are at an increased risk of developing shingles infection compared to the general population. It is therefore important that all eligible patients with RA are clinically assessed for their suitability to receive shingles vaccine as they have significant ability to benefit. Where possible, eligible patients with RA should be offered shingles vaccine prior to commencing treatment with non-biological or biological therapies, for example recombinant monoclonal antibody therapy.

Eligible patients who have already commenced treatment with non-biological therapies may also be considered for shingles vaccination. However, for those patients who have already commenced biological therapy, Zostavax should not be administered.

As patients receiving immunosuppressive therapy for rheumatological conditions will usually be under the care of a rheumatologist, the British Society for Rheumatology recommends that eligible patients are clinically assessed by their specialist and that the specialist then liaises with primary care to advise on individual patient suitability for the vaccine.

Patients with Inflammatory Bowel Disease (IBD)

Patients with inflammatory bowel disease (IBD) are at an increased risk of developing shingles compared to the general population. Where possible, eligible patients with IBD should be offered the vaccine prior to commencing treatment with immunomodulating or biological therapies.

It is recommended that eligible patients receiving immunosuppressive therapy for IBD should be assessed by their gastroenterologist who should then liaise with primary care to advise on individual patient suitability for Zostavax vaccine.

Patients prescribed mesalazine

On its own, mesalazine is not considered highly immunosuppressive so does not contraindicate Zostavax vaccine. The patient should be assessed to identify if they are taking any other prescribed medication that may be immunosuppressive and therefore contraindicate Zostavax vaccine.

Patients with dermatological conditions

The risk of shingles infection is increased with advancing age, prolonged treatment with oral corticosteroids, and with immunosuppressive and biological agents. As these therapeutic agents may be used in the management of dermatological conditions, patients eligible for the national programme should be clinically assessed for their suitability to receive Zostavax prior to commencing treatment, as they may benefit significantly from receiving the vaccine.

Patients already established on biological therapy, such as Etanercept and Infliximab, should not receive Zostavax.

It is recommended that eligible patients receiving immunosuppressive therapy for a dermatological condition should be assessed by their dermatologist who should then liaise with primary care to advise on the individual patient suitability for Zostavax vaccine.

Patients with renal conditions such as glomerulonephritis or reduced renal function

Patients with impaired renal function or receiving immunosuppression for inflammatory renal diseases will have an increased risk of shingles as well as reduced vaccine responses and may have reduced clearance of oral immunosuppressants and their active metabolites including azathioprine, methotrexate and 6-mercaptopurine.

Patients requiring low dose oral immunosuppression for inflammatory renal disease with preserved kidney function who are in remission could be considered for Zostavax if they are receiving long term stable low dose corticosteroid therapy – check Green Book Shingles chapter for full details, doses and definitions. Zostavax is contraindicated for some patients with inflammatory renal disease.

Patients with an absent or dysfunctional spleen

Eligible patients who have an absent or dysfunctional spleen should be offered Zostavax, unless otherwise contraindicated, as they have a significant ability to benefit from the vaccine. Whilst there is no evidence relating specifically to the use of Zostavax in splenectomy patients, asplenia or a dysfunctional spleen is not considered a contraindication to receiving the vaccine unless it is contraindicated due to their underlying medical condition or treatment.

Live and inactivated vaccines are safely administered to many children and adults with an absent or dysfunctional spleen in primary care to offer protection against a range of vaccine preventable diseases. However, whilst asplenia itself is not a contraindication to receiving Zostavax, it is important for healthcare professionals to be aware of the underlying cause that has resulted in the absent or dysfunctional spleen, as this may be a contraindication to receiving the vaccine. For example, leukaemic infiltration is a potential reason for splenectomy, and the patient may therefore have an acute leukaemia which is one of the specific contraindications to use of Zostavax.

Offering the shingles vaccine to eligible patients who are asplenic or who have a dysfunctional spleen provides an opportunity for the clinician to ensure the patient is up-to-date with all the recommended vaccines for asplenic patients, as documented in the Green Book Chapter 7.

Vaccination of individuals receiving palliative care (cancer diagnosis)

Some individuals may be receiving medication following a cancer diagnosis that does not contraindicate receipt of Zostavax. An example would be Prostap for prostate cancer. This drug is not in itself immunosuppressive but the patient should be assessed for evidence of immunosuppression from disease or other medications before administration of a live vaccine.

Patients receiving antiviral agents (oral or intravenous)

Zostavax should be delayed for eligible patients currently receiving oral or intravenous antivirals (such as aciclovir) until 48 hours after cessation of treatment – see Green Book Shingles chapter for further details. This also applies to individuals receiving aciclovir prophylaxis which should be ceased for 48 hours before vaccination and individuals who have received high dose IVIG or VZIG in the previous 6 weeks. This is due to the potential to lower effectiveness of the vaccine as the therapy may reduce response to the vaccine.

The use of topical aciclovir is not a contraindication to either Zostavax or Shingrix vaccination.

Where possible, antiviral therapies should not be started within 2 weeks after receiving Zostavax as this may adversely affect the effectiveness of the vaccine.

Topical or inhaled corticosteroids or corticosteroid replacement therapy

Zostavax is not contraindicated for use in individuals who are receiving topical to inhaled corticosteroids or corticosteroid replacement therapy.

Patients anticipating immunosuppressive therapy

The risk and severity of shingles is considerably higher amongst immunosuppressed individuals and therefore eligible individuals anticipating immunosuppressive therapy should ideally be assessed for vaccine eligibility before starting treatment that may contraindicate future Zostavax vaccination. Such individuals are not currently eligible for pre-treatment vaccination with Shingrix. Supply of Shingrix is currently limited and so vaccine supplied via the national programme should not be used for this indication.

Eligible individuals who have not received Zostavax should receive a single dose of vaccine at the earliest opportunity and at least 14 days before starting immunosuppressive therapy, although leaving 1 month would be preferable if a delay is possible.

Adverse reactions following shingles vaccine

Adverse reactions commonly associated with the administration of Zostavax

The most commonly reported adverse reactions following vaccination with Zostavax in clinical trials were injection site reactions (affecting at least 1 in 10 of those receiving the vaccine), erythema (redness), pain, swelling and pruritus (itching) at the injection site, and headache.

Adverse reactions commonly associated with the administration of Shingrix

The most commonly reported adverse reactions following Shingrix in clinical trials were pain at the injection site, myalgia, fatigue, headache, fever and gastrointestinal symptoms lasting 2 to 3 days. Reactions can be following either the first, second or following both doses of Shingrix vaccine. Reactions are generally reported to be lower in those 70 years of age and above.

Development of a vesicular rash after receiving Zostavax

Although transmission of the Zostavax vaccine virus (Oka/Merck strain) has not been reported during clinical trials, any person developing a vesicular rash after receiving Zostavax should be tested, as recommended below.

Manufacturer experience with varicella (chickenpox) vaccines that use a lower dose of the same virus strain, suggests that transmission of vaccine virus may occur rarely between vaccinees who develop a varicella-zoster virus (VZV) like rash and susceptible close contacts.

As a precautionary measure, any person who develops a vesicular rash after receiving Zostavax should ensure the rash area is kept covered when in contact with a susceptible (chickenpox naïve) person until the rash is dry and crusted. If the person who received the vaccine is themselves immunosuppressed, they should avoid contact with susceptible people until the rash is dry and crusted, due to the higher risk of virus shedding.

N.B. Immunosuppressed individuals who develop a rash following inadvertent vaccination with Zostavax should be urgently assessed and offered prompt treatment with aciclovir – see the guidance in the section titled ‘Action to take if immunosuppressed individual inadvertently given Zostavax'.

In addition to the precautionary measures outlined above, a vesicle fluid sample should also be sent for analysis to confirm the diagnosis and determine whether the rash is vaccine associated or wild type. This service is available at the Virus Reference Department (VRD) UK Health Security Agency (UKHSA), Colindale. Please note sampling kits are not supplied by the Virus Reference Department at UKHSA. Health professionals are requested to obtain vesicle swabs from their local hospital laboratories. Forms and instructions on how to take a vesicle fluid sample are available from GOV.UK Varicella zoster virus referral form.

Contact tracing is not required if an immunocompetent person develops a localised vesicular rash following vaccination.

Development of a rash after Shingrix vaccine

As Shingrix vaccine is not a live vaccine, it should not cause the development of a vesicular rash. If a vesicular rash does develop after Shingrix vaccine, the patient should be referred for prompt assessment and management as it is likely that they have developed shingles naturally (not due to the vaccine) and are at risk of disseminated zoster.

Reporting adverse reactions to Zostavax and Shingrix vaccines

Serious suspected adverse reactions to Zostavax and Shingrix should be reported to the Medicines and Healthcare Products Regulatory Agency (MHRA) using the yellow card reporting scheme.

Vaccine administration queries

Vaccination of individuals with no previous history of chickenpox infection

Although an individual may present without a clinical history of chickenpox, the majority of adults in the UK are immune and many would have had a subclinical infection without being aware. The vaccine should therefore still be offered to individuals without a clinical history of chickenpox to ensure protection against shingles. A previous clinical history of chickenpox infection is not a pre-requisite for receiving either Zostavax or Shingrix shingles vaccine.

Individuals who have been tested for chickenpox and are negative for varicella zoster (VZV) on a quantitative test should not be offered shingles vaccine but should be assessed on an individual basis to decide on the best course of action.

Vaccination of individuals with a current chickenpox infection

It is very unlikely that someone in the eligible age range has never previously had chickenpox. Individuals presenting aged 70 years or over with a first time chickenpox infection should be assessed to determine whether or not they are immunosuppressed as it is possible that they may have disseminated zoster. If found to be immunosuppressed following clinical review, follow the advice in the Green Book Shingles Chapter 28a and sections on ‘Immunosuppressed individuals and eligibility of individuals in clinical risk groups that should be offered Shingrix in preference to Zostavax’.

Interval after exposure to a person with chickenpox or shingles

Zostavax and Shingrix vaccine can still be offered if an individual has been exposed to another person with chickenpox or shingles without any interval providing the patient is well and there are no known contraindications to the vaccine.

Neither Zostavax or Shingrix are recommended for use as post-exposure prophylaxis for chickenpox or shingles. Zostavax and Shingrix are not recommended for the treatment of shingles or post herpetic neuralgia (PHN).

Individuals with a recent history of shingles

Individuals with a previous history of shingles infection are still eligible for shingles vaccine.

Immunocompetent individuals who present with a recent history of shingles infection should ideally have their vaccination delayed for 1 year as boosting from natural infection is likely to offer protection at least until this time.

Individuals who have 2 or more episodes of shingles in 1 year should have immunological investigation prior to vaccination. Clinicians may wish to discuss such cases with local specialist teams.

For immunocompetent individuals aged between 79 and 80 years at the time of natural shingles infection, it is acceptable to reduce the interval from recovery to vaccination to less than 1 year to enable Zostavax vaccine to be administered as part of the national programme before the 80th birthday.

As there is very little data on waning antibodies following natural infection, particularly beyond 6 months, there is currently no recommendation for revaccination if shingles vaccine is administered with a less than one year interval from natural infection.

For immunosuppressed individuals being offered Shingrix vaccine, Shingrix can be given as long as the individual has recovered from acute infection and they have no active vesicles.

There is no additional wait period for these individuals since they are at higher risk of recurrent episodes of shingles.

Vaccination of individuals less than 70 years of age with a previous history of shingles infection (including recurrent shingles infections)

Individuals within this age group who present with a previous history of shingles should be reassured that having natural infection will help to boost the individual’s immune response to

the virus. Therefore, such individuals should wait until they become eligible for the national programme, ideally allowing a 1 year interval period between vaccination and the last episode of infection if possible.

Patients who have 2 or more episodes of shingles in 1 year should have immunological investigation prior to vaccination. Clinicians may wish to discuss such cases with local specialist teams.

Vaccination of individuals with post herpetic neuralgia or residual nerve pain

Shingles vaccine is not licensed for the treatment of shingles or shingles related postherpetic neuralgia (PHN). Individuals who have active PHN should wait until the symptoms resolve. In some cases PHN can be persistent and the patient may experience residual nerve pain that may be permanent. These patients should be assessed and vaccination offered as appropriate.

Vaccination of individuals who have received Zostavax before 70 years of age

Individuals vaccinated with Zostavax before 60 years of age

These individuals should be reassessed for any contraindications and offered another dose of the appropriate shingles vaccine once they reach 70 years of age. It does not matter how long the interval between doses of Zostavax has been.

One trial that looked at revaccination in individuals vaccinated with Zostavax more than 10 years previously found no increase in local or systemic reactions.

Individuals vaccinated with Zostavax between 60 and 70 years of age

Individuals who received a dose of Zostavax between 60 and 70 years of age should be assessed on an individual basis for recommendation on further doses of shingles vaccine.

Vaccination of individuals who received Shingrix before 70 years of age

If a healthy individual has received a single dose of Shingrix vaccine before 70 years of age then they would be eligible for a dose of Zostavax (if there are no contraindications to the vaccine) when they turn 70 years of age.

If an immunocompromised individual has received a single dose of Shingrix vaccine before 70 years of age and is still immunocompromised when they turn 70 years of age then a second dose of Shingrix vaccine should be given to complete the 2 dose course regardless of the interval between doses. The course does not need to be restarted.

If 2 doses of Shingrix vaccine have been administered over 50 years of age, with an interval of at least 2 months, no further vaccine is required, regardless of the interval or number of years since administration of Shingrix vaccine. At present the recommendation for a booster dose after the primary schedule has not been established.

Administering Zostavax at the same time as other vaccines

Zostavax can be administered at the same time, or at any interval before or after any other vaccine, with the exception of MMR and coronavirus (COVID-19) vaccine (see section on COVID-19 vaccine below). If MMR vaccine is required and this cannot be administered at the same time as Zostavax, a 4 week minimum interval should be observed between vaccines (see Green Book Chapter 11 Table 11.3).

Full details on administration of live vaccine combinations are available in the Green Book Chapter 11 Table 11.3).

Where more than 1 vaccine is administered at the same time, the vaccines should be given at a separate site, preferably in a different limb. If more than 1 vaccine is given in the same limb, they should be given at least 2.5cm apart. The sites at which each vaccine is given should be noted in the individual's health records.

Administering Zostavax and Shingrix at the same time as COVID-19 vaccine

Immunisation with Zostavax and Shingrix should ideally be delayed for 7 days after COVID-19 vaccination and vice versa. Neither vaccine has been tested for routine co-administration; there is potential for the side effects of Shingrix to be confused with those of COVID-19 vaccines, and there may be a reduced response to Zostavax. Where individuals attend requiring both vaccines however, and require rapid protection or are considered likely to be lost to follow up, co-administration may still be considered.

Administering Shingrix at the same time as other vaccines

Shingrix can be given concomitantly with inactivated influenza vaccine. However, because of the absence of data on co-administration with Shingrix vaccine with adjuvanted influenza vaccine (aQIV), it should not be routine to offer appointments to give this vaccine at the same time as the adjuvanted influenza vaccine. Based on current information, scheduling should ideally be separated by an interval of at least 7 days to avoid incorrect attribution of potential adverse events. Where individuals attend requiring both vaccines however, and require rapid protection or are considered likely to be lost to follow up, co-administration may still be considered.

As Shingrix is an inactivated vaccine, where individuals in an eligible cohort present having received another inactivated or live vaccine (other than COVID-19 vaccine – see section on COVID-19 vaccine above), Shingrix vaccination should still be considered. In most cases, vaccination should proceed to avoid any further delay in protection and to avoid the risk of

the patient not returning for a later appointment. In such circumstances, patients should be informed about the likely timing of potential adverse events relating to each vaccine.

Individuals who have inadvertently received 1 dose of Shingrix when Zostavax would have been suitable

The current programme recommendation is to only offer Shingrix vaccine to individuals for whom Zostavax is clinically contraindicated. If a dose of Shingrix vaccine has inadvertently been given to an individual who did not have any contraindications to receiving Zostavax then Zostavax, rather than Shingrix, should be given at the time the second dose of Shingrix would have been scheduled.

Vaccine schedule if the second dose of Shingrix is delayed by more than 6 months from the first dose

The vaccine schedule does not need to be restarted if more than 6 months have elapsed since the first dose of Shingrix. The second dose should be given as soon as possible to provide protection and complete the schedule.

Vaccine schedule if the second dose of Shingrix vaccine is given earlier than the recommended 2 months from the first dose

The recommended schedule for Shingrix vaccine is 2 doses, with the second dose given 2 months after the first dose. If the second dose is given earlier than 4 weeks from the first dose then the dose should be repeated with an interval of at least 8 weeks from the last dose.

Patients eligible for shingles vaccine (70 to 79 years of age) for whom Zostavax has been previously contraindicated

Patients between 70 and 79 years of age who were not given shingles vaccination previously because it was contraindicated due to an underlying medical condition or treatment, should be re-assessed for vaccine suitability and offered Shingrix if Zostavax is still contraindicated.

Patients 80 years of age and above who have not received shingles vaccine

Any individual who reaches their 80th birthday is no longer eligible for a shingles vaccination due to the reducing efficacy of the vaccine as age increases.

Inadvertent vaccine administration errors

Healthcare professionals should report all inadvertent vaccine administration errors via their local governance system(s) so that appropriate action can be taken, lessons can be learnt and the risk of future errors minimised.

Inadvertent administration of Zostavax during pregnancy

As a precautionary measure, health professionals should treat the inadvertent administration of Zostavax vaccine in a pregnant woman in the same way as a natural exposure to chickenpox infection and should urgently assess the woman's susceptibility to chickenpox. See Varicella zoster immunoglobulin guidance and advice for Pregnant women who have received shingles (Zostavax) vaccine on GOV.UK.

For those women who are unable to give a reliable history of chickenpox infection or documented evidence of varicella vaccination, an urgent varicella antibody test (VZV IgG) should be performed. For those women who are found to be VZV IgG negative on testing, please contact the duty doctor at UKHSA Colindale (T: 020 8200 4400) for further advice and consideration of the use of VZIG within 10 days of inadvertent vaccination.

Samples from those pregnant women found to be VZV IgG negative on local testing will be requested to be sent to the Virus Reference Department for storage.

All incidents of inadvertent administration of Zostavax during pregnancy should also be reported to UKHSA using the vaccines administered in pregnancy reporting form (VIP). This national surveillance collects additional information on such exposures so that UKHSA can better inform health professionals and pregnant women in the future.

Inadvertently administering Zostavax during pregnancy is a serious clinical incident that should be reported immediately.

Administration of Shingrix during pregnancy

There is no data on the use of Shingrix in pregnant women but as a precautionary measure it is preferable to avoid the use of Shingrix during pregnancy.

If Shingrix vaccine is inadvertently administered to a pregnant woman, the individual should be informed and reassured that there is no known risk associated with giving Shingrix during pregnancy since as it is an inactivated vaccine, it cannot replicate and therefore cannot cause infection in the mother or foetus. They should be advised to seek medical advice for any concerns.

Inadvertent administration of Zostavax to immunosuppressed individuals

Immunosuppressed individuals who are inadvertently vaccinated with Zostavax should be urgently assessed by a clinician to establish the degree of immunosuppression. As individuals of this age group should be VZV antibody positive, varicella-zoster immunoglobulin is unlikely to be of benefit but prophylactic aciclovir may be considered in those in whom the attenuated vaccine virus poses a significant risk.

Immunosuppressed individuals who develop a varicella rash following inadvertent vaccination should be urgently assessed by a hospital specialist and offered prompt treatment with high dose IV aciclovir given the risks and severity of disseminated zoster. See section on ‘Development of a vesicular rash after receiving Zostavax’ as to further action that should be taken if a patient develops a vesicular rash after Zostavax. Adverse events following administration of Zostavax should be reported to the MHRA via the Yellow Card scheme.

Inadvertent administration of a second dose of Zostavax

Inadvertent administration of a repeat dose of Zostavax is unlikely to cause harm but the patient should be assessed to ensure that they have no contraindications.

If there are no contraindications to receiving Zostavax and the individual is not immunosuppressed, they should be reassured that any pre-existing antibodies from the first dose may potentially be boosted by a subsequent dose. Possible side effects are likely to be similar to those from the first dose.

If the patient is immunosuppressed follow advice in section 'inadvertent administration of Zostavax to immunosuppressed individuals'.

Inadvertent administration of Shingrix to a child

Shingrix is licensed from 18 years of age. Parents should be advised of the error and of possible side effects such as pain at the injection site, fatigue, myalgia, headache, fever, and to seek medical advice with any concerns.

If Shingrix was inadvertently given to a child instead of varicella vaccine, the dose does not count and varicella vaccine should be administered as soon as possible after the error is realised. There is no recommended interval between inadvertent Shingrix vaccine and varicella vaccine.

Inadvertent administration of varicella vaccine (Varivax or Varilrix) to an adult instead of Zostavax

Varicella vaccines contains a significantly lower antigen content than Zostavax and are unlikely to provide the same level of protection against herpes zoster. Therefore, the varicella vaccine should be discounted and a further dose of Zostavax vaccine should be offered if there are no contraindications.

Zostavax should be administered at the same visit following the inadvertent administration of varicella vaccine or, if this is not possible, it should be administered as soon as possible after the error is realised.

Inadvertent administration of varicella vaccine (Varivax or Varilrix) to an adult instead of Shingrix

Immunosuppressed individuals who are inadvertently vaccinated with live varicella vaccine (Varivax or Varilrix) when they should have received inactivated shingles vaccine (Shingrix) should be urgently assessed to establish the degree of immunosuppression and followed up on an individual basis.

As individuals of this age group should be VZV antibody positive, varicella-zoster immunoglobulin is unlikely to be of benefit but prophylactic aciclovir may be considered in those in whom the attenuated vaccine virus poses a significant risk.

The individual would need protection from administration of the correct shingles vaccine after completion of aciclovir treatment.

Inadvertent administration of Zostavax instead of varicella vaccine (Varivax or Varilrix)

Zostavax is licensed for the immunisation of individuals aged 50 years and above for the prevention of shingles (Herpes Zoster) and shingles related post herpetic neuralgia. Varivax and Varilrix are licensed for the prevention of primary varicella (chickenpox) infection. Zostavax should not be used as a vaccination against chickenpox.

Although Zostavax is similar to the varicella vaccine, it has significantly higher antigen content. Early trials of chickenpox vaccine in susceptible children used vaccine at antigen doses approaching the range used in Zostavax. The high dose formulation was well tolerated and efficacious.

If Zostavax has inadvertently been given (where there are no contraindications to the vaccine), it is unlikely to result in serious adverse reactions and should count as a valid dose of varicella vaccine.

Inadvertent partial or incomplete dose of Zostavax or Shingrix vaccine

If the patient is still in clinic, repeat a full dose immediately. If the dose cannot be given on the same day administer another dose 4 weeks after the invalid (incomplete or partial) dose. The wait period is because of the potential reactogenicity.

If an incomplete or partial dose 'first' dose of Shingrix is given and a replacement dose is not administered until 4 weeks later, ensure a further dose (which will actually be the third dose) is given 2 months after the replacement dose to ensure the schedule is completed and that the patient will have received 2 valid doses of vaccine.

Inadvertent administration of Shingrix diluent only

As the diluent contains the AS01B adjuvant suspension which can be highly reactogenic, it is recommended that an interval of 4 weeks is observed before giving the correctly reconstituted dose.

Further resources

UKHSA Immunisation against infectious diseases (The Green Book): Chapter 28a Shingles (herpes zoster)

UKHSA Shingles: guidance and vaccination programme

UKHSA Shingles vaccination: guidance for healthcare professionals

NHS Choices. Shingles

Vaccine uptake guidance and the latest coverage data – Shingles

The use of human and animal products in vaccines

Viral rash in pregnancy guidelines

Varicella zoster immunoglobulin

Shingles leaflets, posters and graphics

To order shingles social media graphics, invitation post cards, posters, patient leaflets and the shingrix flyer to be delivered to you, please visit Health Publications and register, search for Shingles. NB digital resources such as the social media graphics are download only.

Useful references

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About the UK Health Security Agency

UKHSA is responsible for protecting every member of every community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. We provide intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation health secure.

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